Compressor Documentation

Release 2.9

/ELSA/MU-14010/V2.9

Jun 07, 2019

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CHAPTER

ONE

PREAMBLE

Compressor enables fields compression for arrays/pyTrees.

This module is part of Cassiopee, a free open-source pre- and post-processor for CFD simulations.

To use the module with the Compressor array interface:

```
import Compressor
```

To use the module with the CGNS/Python interface:

```
import Compressor.PyTree as Compressor
```

CHAPTER

TWO

LIST OF FUNCTIONS

– Index field compression

`Compressor.deltaIndex`(index, ref)	Return the delta between index and ref.

– Object serializer/compression

`Compressor.pack`(a[, method])	Serialize or compress a.
`Compressor.unpack`(a[, method])	Deserialize or decompress a.

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THREE

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3.1 Index field compression

`Compressor.`**`deltaIndex`**(*a*, *ref*)

Compress a list of indices using delta algorithm. The return Delta contains the number of added indices in a when compared to ref, the list of added indices, the number of suppressed indices, the list of suppressed indices.

Parameters

- **`a`** (`numpy of ints`) – input indices
- **`ref`** (`numpy`) – compared indices

Returns list of added indices, the number of supressed indices, list of suppress indices

Return type (numpy, int, numpy)

- Compression by delta (numpy):

```
# - deltaIndex -
import numpy
import Compressor

# Liste des indexes de reference
indRef = numpy.array([1,2,3,4,5], dtype='int32')

# Liste des indexes a comparer a la reference
index = numpy.array([1,2,3,4], dtype='int32')

delta = Compressor.deltaIndex(index, indRef)
print(delta)
```

3.2 Object serialize/compression

`Compressor.`**`pack`**`(`*a*`)`

Serialize/compress a python object a. For now, this is only a general interface to pickle module.

Parameters **a** (`python object`) – any python object

Returns serialized stream

- Object serialization (numpy):

```
# - pack -
import Compressor
import Generator.PyTree as G
a = G.cart((0,0,0), (1,1,1), (1000,100,100))
b = Compressor.pack(a)
```

`Compressor.`**`unpack`**`(`*a*`)`

Deserialize/decompress a serialized stream b. For now, this is only a general interface to pickle module.

Parameters **a** (`serialized stream`) – a serialized stream as produced by pack

Returns python object

- Object deserialization (numpy):

```
# - unpack -
import Compressor
import Generator.PyTree as G
a = G.cart((0,0,0), (1,1,1), (1000,100,100))
b = Compressor.pack(a)
c = Compressor.unpack(b)
```

CHAPTER FOUR

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